IN THE CLAIMS:

Please amend claims 1, 11, 12, 19, 37, 38 and 45-50 as follows.

1. (Currently Amended) A link protocol redundancy method, comprising:

providing a router having an active processor;

coupling a standby processor to said active processor;

forwarding network link protocol information from said active processor to said standby processor for synchronizing link configuration and link protocol states of said active processor at said standby processor upon coupling of said standby processor to said active processor by maintaining a synchronization state machine for each task within a protocol; and

switching said router to said standby processor when a failure is detected at said active processor;

wherein all states of said link protocol immediately function as if the failure had not occurred, and

wherein a hidden interface is created on both the active processor and the standby processor for each area during initial synchronization, each area being a group of contiguous networks and attached hosts, the hidden interface being unexposed, and at least one hidden adjacency being automatically built over the hidden interface for each area and being used to synchronize databases on both the active processor and the standby processor.

2. (Previously Presented) The method of claim 1, wherein said link protocol is an Open Shortest Path First (OSPF) protocol.

3. (Previously Presented) The method of claim 2, wherein said link protocol information is link-state database information, OSPF configuration information, OSPF adjacencies information, OSPF interface information and OSPF global protocol information.

4. (Previously Presented) The method of claim 2, further comprising processing identical OSPF packets after synchronizing said link configuration and link protocol states between said active processor and said standby processor

5. (Previously Presented) The method of claim 3, wherein forwarding link protocol information is performed by:

creating a hidden OSPF interface for each area of said active processor;

creating a hidden OSPF interface for each area of said standby processor; and

forwarding said link-state database information from said hidden OSPF interface of said active processor to said hidden OSPF interface of said standby processor until said link state database of said standby processor is synchronized with said link state database of said active processor.

6. (Previously Presented) The method of claim 5, further comprising forwarding said OSPF configuration information, OSPF adjacencies information, OSPF interface information and OSPF global protocol information, using said hidden OSPF interface of said active processor and said hidden OSPF interface of said standby processor.

7. (Previously Presented) The method of claim 5, wherein said link protocol information is in the form of Inter Process Control messages.

8. (Previously Presented) The method of claim 7, wherein said OSPF configuration information is determined from Command Line Interface (CLI) commands stored in a datastore.

9. (Previously Presented) The method of claim 1, further comprising:

updating network link protocol information at said active processor; and

forwarding said updated network link protocol information to said standby processor.

10. (Previously Presented) The method of claim 4, wherein said forwarding is a process based on a Database Exchange Process of the OSPF protocol.

11. (Currently Amended) An OSPF protocol redundancy method comprising:

providing a router having an active processor;

coupling a standby processor to said active processor;

forwarding network OSPF protocol information from said active processor to said standby processor for synchronizing OSPF configuration and OSPF protocol states of said active processor at said standby processor by maintaining a synchronization state machine for each task within a protocol; and

switching said router to said standby processor when a failure is detected at said active processor,

wherein all states of said OSPF protocol immediately function as if the failure had not occurred, and

wherein a hidden interface is created on both the active processor and the standby processor for each area during initial synchronization each area being a group of contiguous networks and attached hosts, the hidden interface being unexposed, and at least one hidden adjacency being automatically built over the hidden interface for each area and being used to synchronize databases on both the active processor and the standby processor.

12. (Currently Amended) A link protocol redundancy method, comprising:

providing a router having an active processor;

coupling a standby processor to said active processor;

forwarding network link protocol information from said active processor to said standby processor for synchronizing link configuration and link protocol states of said active processor at said standby processor by maintaining a synchronization state machine for each task within a protocol said link protocol information is link-state database information, OSPF configuration information, OSPF adjacencies information, OSPF interface information and OSPF global protocol information; and

switching said router to said standby processor when a failure is detected at said active processor;

wherein all states of said link protocol immediately function as if the failure had not occurred, and

wherein a hidden interface is created on both the active processor and the standby processor for each area during initial synchronization, each area being a group of contiguous networks and attached hosts, the hidden interface being unexposed, and at least one hidden adjacency being automatically built over the hidden interface for each area and being used to synchronize databases on both the active processor and the standby processor.

13. (Previously Presented) A method for implementing OSPF redundancy, comprising:

providing a router having an active processor means and a standby processor means;

building a hidden OSPF interface on said active processor means and a hidden OSPF interface on said standby processor means, the hidden OSPF interface on said active processor means and the hidden OSPF interface on said standby processor means being unexposed and at least one adjacency for synchronizing database on the active processor means and on the standby processor means being automatically built over the hidden OSPF interface on said active processor means and the hidden OSPF interface on said standby processor means;

connecting said hidden OSPF interface of said active processor means to said hidden OSPF interface of said standby processor means over a communications link;

synchronizing an OSPF routing database using an OSPF protocol over said hidden OSPF interface, such that said OSPF routing database is synchronized when said hidden OSPF interface of said active processor means and said hidden OSPF interface of said standby processor means reach a full adjacency state;

transferring OSPF protocol information from said hidden OSPF interface of said active processor means to said hidden OSPF interface of said standby processor means over said communications link to mirror states of said active processor means and said standby processor means by maintaining a synchronization state machine for each task within a protocol;

removing said hidden interface of said active processor means and said hidden interface of said standby processor means; and

assuming control by said standby processor means when a failure is detected in said active processor means.

14. (Previously Presented) The method of claim 13, wherein said OSPF protocol information is OSPF configuration information, OSPF adjacencies information, OSPF interface information and OSPF global protocol information.

15. (Previously Presented) The method of claim 14, wherein said OSPF configuration information is determined from Commercial Line Interface commands stored in a datastore.

16. (Previously Presented) The method of claim 13, further comprising:

updating network link protocol information at said active processor means; and

forwarding said updated network link protocol information to said standby processor means.

17. (Previously Presented) The method of claim 13, wherein said synchronizing is a process based on a Database Exchange Process of the OSPF protocol.

18. (Previously Presented) The method of claim 13, further comprising processing identical OSPF packets after synchronizing said link configuration and link protocol states between said active processor and said standby processor.

19. (Currently Amended) A system for providing link protocol redundancy in a router, comprising:

an active processor;

a standby processor;

a unit configured to forward network link protocol information from said active processor to said standby processor for synchronizing link configuration and link protocol states of said active processor at said standby processor including a redundant card manager to maintain a synchronization state machine of said link protocol states for tasks of said protocol; and

a unit configured to switch said router to said standby processor when a failure is detected at said active processor;

wherein all states of said link protocol immediately function as if the failure had not occurred, and

wherein a hidden interface is created on both the active processor and the standby processor for each area during initial synchronization, each area being a group of contiguous networks and attached hosts, the hidden interface being unexposed, and at least one hidden adjacency being automatically built over the hidden interface for each

area and being used to synchronize databases on both the active processor and the standby processor.

20. (Previously Presented) The system of claim 19, wherein said link protocol is an OSPF protocol.

21. (Previously Presented) The system of claim 19, wherein said link protocol information is link-state database information, OSPF configuration information, OSPF adjacencies information, OSPF interface information and OSPF global protocol information.

22. (Previously Presented) The system of claim 21, wherein said unit for forwarding link protocol information comprises:

a unit for creating a hidden OSPF interface on for each area of said active processor;

a unit for creating a hidden OSPF interface for each area of said standby processor; and

a unit for forwarding said link-state database information from said hidden OSPF interface of said active processor to said hidden OSPF interface of said standby processor until said link state database of said standby processor is synchronized with said link state database of said active processor.

23. (Previously Presented) The system of claim 22, wherein said unit for forwarding link protocol information comprises forwarding said OSPF configuration information, said OSPF adjacencies information, said OSPF interface information and said OSPF global protocol information using said hidden OSPF interface of said active processor and said hidden OSPF interface of said standby processor.

24. (Previously Presented) The system of claim 23, wherein said OSPF configuration information is determined from Command Line Interface commands stored in a datastore.

25. (Previously Presented) The system of claim 19, further comprising:

a unit for updating network link protocol information at said active processor; and

a unit for forwarding said updated network link protocol information to said standby processor.

26. (Previously Presented) The system of claim 19, wherein said network link protocol information is forwarded through said redundant card manager.

27. (Previously Presented) The system of claim 26, further comprising a task manager for determining said link protocol states of said tasks and forwarding said link protocol states to said redundant card manager.

28. (Previously Presented) The system of claim 26, wherein said unit for switching said router to said standby processor comprises a software redundancy manager which interacts with said redundant card manager to indicate switch over from said active processor to said standby processor.

29. (Previously Presented) The system of claim 26, wherein said state of said tasks enters an OSPF_FAULT_1NIT state which is an initial state before coupling of standby processor to said active processor.

30. (Previously Presented) The system of claim 26, wherein said state of said tasks enters an OSPF_FAULT_VERIFY state which is entered during synchronization of said link configuration of said active processor and said standby processor.

31. (Previously Presented) The system of claim 26, wherein said state of said tasks enters an OSPF_FAULT_SYNC state during forwarding of said link protocol information from said active processor to said standby processor, said link protocol information comprising link-state database information, OSPF configuration information, OSPF adjacencies information, OSPF interface information and OSPF global protocol information.

32. (Previously Presented) The system of claim 26, wherein said state of said tasks enters an OSPF_FAULT_FULL state after said forwarding network link protocol information, said OSPF_FAULTJULL state is a hot standby state wherein said standby state can immediately take over all operations of said standby processor.

33. (Previously Presented) The system of claim 19, wherein said active processor is an active OSPF control card.

34. (Previously Presented) The system of claim 19, wherein said standby processor is a standby OSPF control card.

35. (Previously Presented) The system of claim 19, wherein forwarding is a process based on a Database Exchange Process of the OSPF protocol.

36. (Previously Presented) The system of claim 19, further comprising:

a unit for processing identical OSPF packets after synchronizing said link configuration and link protocol states between said active processor and said standby processor.

37. (Currently Amended) A system for providing OSPF protocol redundancy in a router, comprising:

an active processor;

a standby processor;

a unit configured to forward network OSPF protocol information from said active processor to said standby processor for synchronizing link configuration and OSPF protocol states of said active processor at said standby processor including a redundant card manager to maintain a synchronization state machine of said link protocol states for tasks of a protocol; and

a unit configured to switch said router to said standby processor when a failure is detected at said active processor;

wherein all states of said OSPF protocol immediately function as if the failure had not occurred, and

wherein a hidden interface is created on both the active processor and the standby processor for each area during initial synchronization, each area being a group of contiguous networks and attached hosts, the hidden interface being unexposed, and at least one hidden adjacency being automatically built over the hidden interface for each area and being used to synchronize databases on both the active processor and the standby processor.

38. (Currently Amended) A system for providing OSPF protocol redundancy in a router, comprising:

an active processor;

a standby processor;

a unit configured to forward network OSPF protocol information from said active processor to said standby processor for synchronizing link configuration and OSPF protocol states of said active processor at said standby processor link-state database information, OSPF configuration information, OSPF adjacencies information, OSPF interface information and OSPF global protocol information, wherein said forwarding unit includes a redundant card manager to maintain a synchronization state machine of said OSPF protocol states for tasks of a protocol; and

a unit configured to switch said router to said standby processor when a failure is detected at said active processor;

wherein all states of said OSPF protocol immediately function as if the failure had not occurred, and

wherein a hidden interface is created on both the active processor and the standby processor for each area during initial synchronization, each area being a group of contiguous networks and attached hosts, the hidden interface being unexposed, and at least one hidden adjacency being automatically built over the hidden interface for each area and being used to synchronize databases on both the active processor and the standby processor.

39. (Previously Presented) A system for implementing OSPF redundancy in a router, comprising:

an active processor unit;

a standby processor unit;

a unit configured to build a hidden OSPF interface on said active processor unit and a hidden OSPF interface on said standby processor unit, the hidden OSPF interface on said active processor unit and the hidden OSPF interface on said standby processor unit being unexposed and at least one adjacency for synchronizing database on the active processor unit and on the standby processor unit being automatically built over the hidden OSPF interface on said active processor unit and the hidden OSPF interface on said standby processor unit;

a unit configured to connect said hidden OSPF interface of said active processor unit to said hidden OSPF interface of said standby processor unit over a communications link;

a unit configured to synchronize an OSPF routing database using an OSPF protocol over said hidden OSPF interface, such that said OSPF routing database is synchronized when said hidden OSPF interface of said active processor unit and said hidden OSPF interface of said standby processor unit reach a full adjacency state;

a unit configured to transfer OSPF protocol information from said hidden OSPF interface of said active processor unit to said hidden OSPF interface of said standby processor unit over said communications link to mirror states of said active processor unit and standby processor unit;

a redundant card manager to maintain a synchronization state machine of said states for tasks of said OSPF protocol;

a unit configured to remove said hidden interface of said active processor unit and said hidden interface of said standby processor unit; and

a unit configured to assume control by said standby processor unit when a failure is detected in said active processor unit.

40. (Previously Presented) The system of claim 39, wherein said OSPF protocol information is OSPF configuration information, OSPF adjacencies information, OSPF interface information and OSPF global protocol information.

41. (Previously Presented) The system of claim 39, wherein said OSPF configuration information is determined from Command Line Interface commands stored in a datastore.

42. (Previously Presented) The system of claim 39, further comprising:

a unit for updating network link protocol information at said active processor unit; and

a unit for forwarding said updated network link protocol information to said standby processor unit.

43. (Previously Presented) The system of claim 39, wherein said forwarding is a process based in a Database Exchange Process of the OSPF protocol.

44. (Previously Presented) The system of claim 39, further comprising:

a unit for processing identical OSPF packets after synchronizing said link configuration and link protocol states between said active processor and said standby processor.

45. (Currently Amended) An apparatus, comprising:

an active processor means;

a standby processor means;

means for forwarding network link protocol information from said active processor means to said standby processor means for synchronizing link configuration and link protocol states of said active processor means at said standby processor means including a redundant card manager to maintain a synchronization state machine of said link protocol states for tasks of said protocol; and

means for switching a~~said~~ router to said standby processor means when a failure is detected at said active processor means;

wherein all states of said link protocol immediately function as if the failure had not occurred, and

wherein a hidden interface is created on both the active processor means and the standby processor means for each area during initial synchronization, each area being a group of contiguous networks and attached hosts, the hidden interface being unexposed, and at least one hidden adjacency being automatically built over the hidden interface for each area and being used to synchronize databases on both the active processor means and the standby processor means.

46. (Currently Amended) An apparatus, comprising:

an active processor means;

a standby processor means;

means for forwarding network OSPF protocol information from said active processor means to said standby processor means for synchronizing link configuration and OSPF protocol states of said active processor means at said standby processor means including a redundant card manager to maintain a synchronization state machine of said link protocol states for tasks of a protocol; and

means for switching ~~said~~ a router to said standby processor when a failure is detected at said active processor;

wherein all states of said OSPF protocol immediately function as if the failure had not occurred,

wherein a hidden interface is created on both the active processor means and the standby processor means for each area during initial synchronization, each area being a

group of contiguous networks and attached hosts, the hidden interface being unexposed, and at least one hidden adjacency being automatically built over the hidden interface for each area and being used to synchronize databases on both the active processor means and the standby processor means.

47. (Currently Amended) An apparatus, comprising:

an active processor means;

a standby processor means;

means for forwarding network OSPF protocol information from said active processor means to said standby processor means for synchronizing link configuration and OSPF protocol states of said active processor means at said standby processor means link-state database information, OSPF configuration information, OSPF adjacencies information, OSPF interface information and OSPF global protocol information, wherein said means for forwarding includes a redundant card manager to maintain a synchronization state machine of said OSPF protocol states for tasks of a protocol ; and

means for switching ~~said~~ a router to said standby processor when a failure is detected at said active processor;

wherein all states of said OSPF protocol immediately function as if the failure had not occurred, and

wherein a hidden interface is created on both the active processor and the standby processor for each area during initial synchronization, each area being a group of

contiguous networks and attached hosts, the hidden interface being unexposed, and at least one hidden adjacency being automatically built over the hidden interface for each area and being used to synchronize databases on both the active processor and the standby processor.

48. (Currently Amended) A computer program embodied on a computer readable medium, the computer program product for providing link protocol redundancy in a router and being configured to perform:

providing a router having an active processor;

coupling a standby processor to said active processor;

forwarding network link protocol information from said active processor to said standby processor for synchronizing link configuration and link protocol states of said active processor at said standby processor upon coupling of said standby processor to said active processor by maintaining a synchronization state machine for each task within a protocol; and

switching said router to said standby processor when a failure is detected at said active processor;

wherein all states of said link protocol immediately function as if the failure had not occurred, and

wherein a hidden interface is created on both the active processor and the standby processor for each area during initial synchronization, each area being a group of

contiguous networks and attached hosts, the hidden interface being unexposed, and at least one hidden adjacency being automatically built over the hidden interface for each area and being used to synchronize databases on both the active processor and the standby processor.

49. (Currently Amended) A computer program embodied on a computer readable medium, the computer program product for providing OSPF protocol redundancy in a router and being configured to perform:

providing a router having an active processor;

coupling a standby processor to said active processor;

forwarding network OSPF protocol information from said active processor to said standby processor for synchronizing OSPF configuration and OSPF protocol states of said active processor at said standby processor by maintaining a synchronization state machine for each task within a protocol; and

switching said router to said standby processor when a failure is detected at said active processor,

wherein all states of said OSPF protocol immediately function as if the failure had not occurred, and

wherein a hidden interface is created on both the active processor and the standby processor for each area during initial synchronization, each area being a group of contiguous networks and attached hosts, the hidden interface being unexposed, and at

least one hidden adjacency being automatically built over the hidden interface for each area and being used to synchronize databases on both the active processor and the standby processor.

50. (Currently Amended) A computer program embodied on a computer readable medium, the computer program product for link protocol redundancy in a router and being configured to perform:

providing a router having an active processor;

coupling a standby processor to said active processor;

forwarding network link protocol information from said active processor to said standby processor for synchronizing link configuration and link protocol states of said active processor at said standby processor by maintaining a synchronization state machine for each task within a protocol said link protocol information is link-state database information, OSPF configuration information, OSPF adjacencies information, OSPF interface information and OSPF global protocol information; and

switching said router to said standby processor when a failure is detected at said active processor;

wherein all states of said link protocol immediately function as if the failure had not occurred, and

wherein a hidden interface is created on both the active processor and the standby processor for each area during initial synchronization, each area being a group of

contiguous networks and attached hosts, the hidden interface being unexposed, and at least one hidden adjacency being automatically built over the hidden interface for each area and being used to synchronize databases on both the active processor and the standby processor.

51. (Previously Presented) A computer program embodied on a computer readable medium, the computer program product for implementing OSPF redundancy and being configured to perform:

providing a router having an active processor means and a standby processor means;

building a hidden OSPF interface on said active processor means and a hidden OSPF interface on said standby processor means, the hidden OSPF interface on said active processor means and the hidden OSPF interface on said standby processor means being unexposed and at least one adjacency for synchronizing database on the active processor means and on the standby processor means being automatically built over the hidden OSPF interface on said active processor means and the hidden OSPF interface on said standby processor means;

connecting said hidden OSPF interface of said active processor means to said hidden OSPF interface of said standby processor means over a communications link;

synchronizing an OSPF routing database using an OSPF protocol over said hidden OSPF interface, such that said OSPF routing database is synchronized when said hidden

OSPF interface of said active processor means and said hidden OSPF interface of said standby processor means reach a full adjacency state;

transferring OSPF protocol information from said hidden OSPF interface of said active processor means to said hidden OSPF interface of said standby processor means over said communications link to mirror states of said active processor means and said standby processor means by maintaining a synchronization state machine for each task within a protocol;

removing said hidden interface of said active processor means and said hidden interface of said standby processor means; and

assuming control by said standby processor means when a failure is detected in said active processor means.